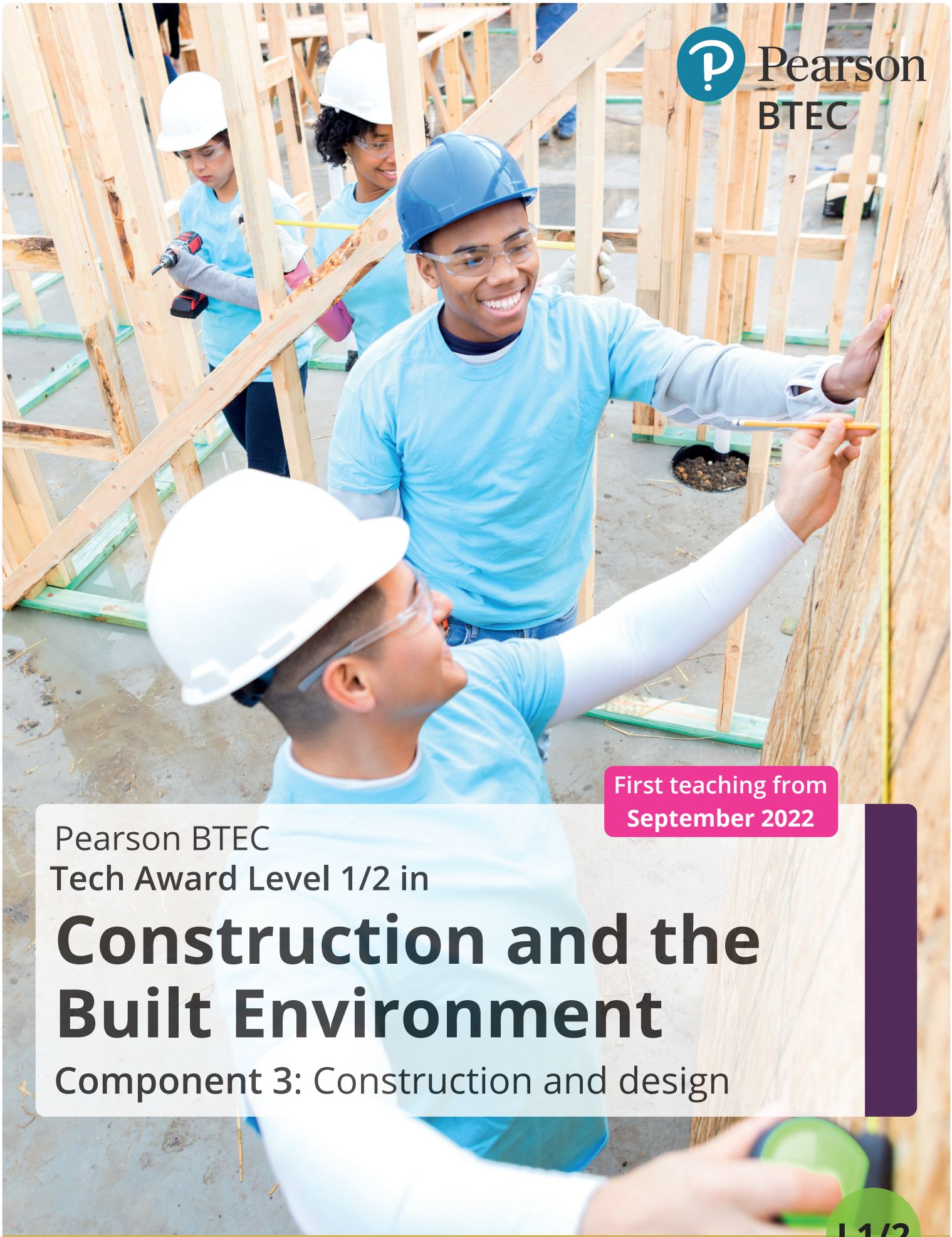

Pearson BTEC

First teaching from September 2022

Pearson BTEC
Tech Award Level 1/2 in

Construction and the Built Environment

Component 3: Construction and design

L1/2

Pearson-set Assignment – sample

First teaching from September 2022

Issue 1

Pearson
BTEC Level 1/Level 2
Tech Award in Construction and the Built Environment

Pearson-set Assignment – Sample

Component 3: Construction and Design

First teaching September 2022

Issue 1

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Introduction

The key purpose of this assessment is for learners to develop their knowledge and understanding in construction design by interpreting client information and external design constraints using content from this component and Components 1 and 2 as this is synoptic. Learners will also demonstrate their practical skills in sketching and communication in low-rise construction.

The assignment for this component consists of two tasks.

- In response to Task 1, learners will use their applied knowledge and understanding throughout this component in addition to the synoptic elements to produce a client brief by analysing information presented in a brief.
- In response to Task 2, learners will demonstrate practical skills in sketching, projection and communication that have been developed in this component. They will produce a range of 2–3 sketches to clearly communicate a design solution that adheres to the design constraints and client information given to the learners.

This assessment will be offered twice a year. The timing of the assessment is approximately 2 hours of monitored preparation, followed by 6 hours to complete the supervised assessment. Centres can choose when to allow learners to complete this monitored preparation.

The assessment evidence is produced under formal supervision to ensure that learners' work is authentic and that all learners have had the same assessment opportunity. The formal supervision takes place in a session/s timetabled by the centre.

Levels of control within this set assignment

The levels of control outlined below must be adhered to and enforced by teachers following the release of the assignment to learners.

Monitored preparation: Preparation time is provided to allow learners to produce preparatory notes for use during formally supervised sessions. This can include research notes on design ideas and architectural styles. Monitored preparation consists of the up to two hours of monitored note preparation with access to the internet. Learners may use a computer and the internet during this time. Preparation can take place both within and outside of the classroom environment but must be monitored to ensure independent working and authenticity of any permitted materials produced. Any preparatory materials produced must be checked and authenticated as the learner's own work. This may be done through engaging in a meaningful dialogue with learners about the work, how it was produced and how they intend to use it towards the assessment. All learner notes must be checked prior to the formal supervision.

Preparatory materials cannot include finished written or practical evidence for assessment prepared in advance of formally supervised sessions. Learners' notes can include information on design features, cost information, typical building and room sizes and descriptive information on architectural styles.

Learners' notes must not include:

- exemplar building plans and/or layouts

- any information copied from the content of *Component 1: Construction Technology*
- any attempt to pre-prepare situational analyses or responses to tasks
- paragraphs or extended sentences.

Centres must make arrangements to:

- collect learner' notes at the end of the monitored preparation period
- check that the notes conform to the guidelines on allowable content
- make the notes available to learners at the start of the formal supervision. If notes are electronic, centres must upload the notes to each learner's machine/restricted secure area prior to the start of the formal supervision session.

Formal supervision: The estimated hours stated for completion of each task in this set assignment refer to formally supervised hours. During formally supervised sessions, learners must work independently, cannot have access to the internet, cannot work with or discuss their work with other learners unless group or collaborative work is required or permitted. Work must be held securely in between supervised sessions and must not be taken in or out of sessions. Learners will be able to access the materials specified in the assessment including materials produced during monitored preparation.

During the formal supervision, learners are allowed to:

- have access to 2 sides of A4 of prepared notes (for the entire Pearson-set Assignment) to allow them to complete the tasks. These may be handwritten or typed. If Word processed, the font size must be 10 point minimum.

Learners must not have access to the internet, email, or any other resources aside from their permitted notes, unless stated as permitted below. Learners are not permitted to remove their notes from the teacher's possession during the formal supervision. For Tasks 1 and 2, learners are able to bring in notes which will include research to complete the tasks. Any research undertaken, or notes made, does not form part of the formal supervision period.

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Instructions to learners

You should read the information given in the vocational context and each task section of this assignment carefully prior to starting work. Tasks often link to one another, so it is important to make sure you understand all tasks before starting the assignment.

The assignment will take approximately 2 hours of monitored preparation and 6 supervised hours to complete.

This is divided into approximately:

- 2 hours of monitored preparation for Task 1 and Task 2
- 3 hours to complete Task 1
- 3 hours to complete Task 2.

These timings are for guidance only, but should be used as an indication of how long to spend on each task. Your teacher will advise you when it is time to move from one task to the next.

You will have 2 hours of monitored preparation time prior to undertaking Task 1 and Task 2. Your teacher will tell you when you should comlete the monitored preparation and when formal supervision for the tasks will begin.

Based of your preparation, you should produce notes to refer to when completing Task 1 and 2. Your notes may be up to 2 sides of A4 paper. They must be hard copy and may be handwritten or typed. If word processed, the font size must be 10 point minimum.

Your notes should be in bulleted or annoatation form and **cannot** include:

- exemplar building plans and/or layouts
- any information copied from the content of *Component 1: Construction Technology*
- any attempt to pre-prepare situational analyses or responses to tasks
- paragraphs or extended sentences.

You must work independently and should not share your work with other learners. All work must be your own and you must sign a declaration of authenticity to confirm this. If group work or collaboration is permitted, you must produce your own independent responses and evidence for the tasks.

Any sources of information, ideas, text, audio and/or visual assets created by others that you include in your work **must** be clearly identified and referenced. Using the work of others as your own or without proper acknowledgement is considered plagiarism and can result in disqualification from the assessment.

You may ask your teacher for support if you have questions about the requirements of tasks, what evidence you need to produce and any resources you are allowed to access. They cannot give you feedback about how to improve your work, or guide you to solutions to any questions or problems in the tasks.

Pearson-set Assignment

Qualification	Pearson BTEC Level 1/Level 2 Tech Award in Construction and the Built Environment
Component number and title	**3:** Construction and Design
Write your name here (Surname, Name)	
Completion time for assignment	Approximately 2 hours of monitored preparation and 6 hours of supervised assessment
Submission deadline	
Assessment series and year	Sample assignment

Vocational context	Understanding and correctly interpreting the client's needs and external design constraints is the most important aspect when designing a low-rise building. To understand the clients, information would usually be taken via interview or a questionnaire. For this task, the key parts of information have been provided in Appendix 1 below. Similarly, the external design constraints and information about the local area have been provided in Appendix 2.

Task 1	**Design brief** Produce a Design brief for the design of the low-rise residential building, using the information provided in the appendix. The Design brief should show an understanding of how the client's needs, lifestyle and budget will impact on the building design and take into account external design constraints, relative to the building's location and scenario. You should consider the following: • accommodation (size, type and number of rooms) • style and aesthetics relative to the local architecture • materials • budget and its impact on the level of specification and the total floor area • site (area, location, access and services) • the impact of planning and building control • sustainability.

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Learning outcome covered	**A:** Understand the needs of a client and the constraints on design when designing a low-rise building
Checklist of evidence required	A written response of approximately 3–5 pages of A4 which can include supporting images
Resources needed	• Research notes • Appendix 1: Client meeting notes. • Appendix 2: External design constraints.
Supervised hours to complete the tasks	Learners would need approximately 3 hours to complete Task 1.
Number of marks	36 marks

Task 2	**Concept sketches**
	Produce a range of well-presented and annotated freehand sketches for the low-rise residential building that must address the client's profile, requirements, needs and lifestyle, within the constraints of the site, the surrounding area and the client's set budget.
	In producing these sketches, you will need to:
	• demonstrate effective design skills considering:
	  ○ the client's needs
	  ○ the external design constraints
	and
	• demonstrate clear communication of design ideas by using:
	  ○ graphical presentation
	  ○ suitable drawing techniques
	  ○ annotations which include labelling and the detailing of key features.

Learning outcome covered	**B:** Be able to graphically communicate the design of a low-rise building
Checklist of evidence required	2–3 sketches on A3 pages with annotations and labelling as necessary.
Resources needed	• Appendix 1: Client meeting notes. • Appendix 2: External design constraints. • A3 paper. • Sketching materials, i.e. ruler, pencil, eraser. • Research notes.
Supervised hours to complete the tasks	Learners would need approximately 3 hours to complete Task 2.
Number of marks	24 marks

Other resources needed to complete this set assignment	• Appendix 1: Client meeting notes. • Appendix 2: External design constraints.

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Guidance for teachers

(to be removed before assignment distribution to learners)

General guidance	This assignment has been designed to allow learners to meet the assessment requirements of the component by engaging in vocationally relevant tasks and activities. You must issue this assignment allowing sufficient time for learners to complete it. You should advise learners of the timetabled sessions during which they should complete monitored preparation and when they will undertake supervised assessment. You should direct learners to read the information given in the vocational context and each task section of this assignment carefully. Tasks often link to one another, so it is important to check that learners understand all tasks before they start the assignment.
Specific guidance	All monitored preparation time and formal supervision period must be completed independently by learners. Learners can use the internet and/or library resources as part of the 2 hours of monitored preparation time, however resources should not be pre-prepared or signposted by the teacher. The assignment will take approximately 2 hours of monitored preparation and 6 supervised hours to complete. This is divided into approximately: • 2 hours of monitored preparation • 3 hours to complete Task 1 • 3 hours to complete Task 2. These timings are for guidance only but should be used to give learners an indication of how long to spend on each task and to schedule your assessment sessions. Tasks can be conducted and evidence can be produced across several sessions. **Submission of evidence for moderation** Evidence submitted for moderation should include a clearly labelled digital folder per learner containing: • all work completed for the assignment • a completed declaration of authenticity. **Guidance on preparing evidence for submission** • Consideration should be given to the quality and clarity of images/scans, audio and/or video submitted as evidence. Images included should be of sufficient size to clearly show the quality/nature of the work being demonstrated.

	• Digital files should be saved in an accessible format that does not require specialist software to access.
Opportunity to contextualise this assignment	No contextualisation is allowed for this assignment. You must not change any aspect of the vocational context or tasks. The set of tasks forms a coherent whole, addressing all the learning outcomes and allowing access to the full range of marks. Altering any aspect of this assignment may constitute malpractice and will be subject to investigation by Pearson.
Before carrying out the assignment	Before this assignment is given to learners, they must undertake a learning programme covering the knowledge, understanding and skills outlined in the component content in the specification. They should be given sufficient time to develop knowledge, understanding and skills in order to achieve their full potential.

During the assignment	For the duration of the assignment:
	• all work must be completed independently by the learner under appropriate monitoring and supervision to ensure authenticity
	• work must be produced in response to the assignment and no work completed during teaching can be used or adapted for this purpose
	• guidance or support can only be given to learners in order to clarify:
	  ○ the requirements of tasks
	  ○ the evidence they need to produce
	  ○ any resources they are allowed to access
	• learners cannot receive any guidance or instruction about how to improve work to meet mark bands or solutions to questions or problems in the tasks
	• learners must not be given any support or feedback in writing or editing notes
	• learners must not be provided with writing frames, prepared formats, templates or any other forms of scaffolding
	• any permitted group or collaborative work must be clearly defined
	• appropriate steps must be taken to prevent plagiarism and/or collusion through supervision and regular checks of work as it develops.
	Maintaining security during formal supervision
	Any work learners produce under supervision must be kept securely between sessions and during breaks.
	Designated assessment areas must only be accessible to the learner and to named members of staff.
	Learners can only have access to their work under supervision.

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	Only permitted materials can be brought into the supervised assessment and no materials should be removed. Learners are not permitted to have access to the internet or other resources that might compromise the security of the assessment.
Approach to teaching and learning to support learners to *'get it right first time'*	In order to fully prepare learners, before the set assignment is distributed, they should: • attempt formative assessment tasks that model important elements of the activities to be carried out in this assignment • receive feedback on how they performed, including what they did well and how they can further improve.
Other materials	This Set Assignment includes additional materials and it is expected that learners will produce their own evidence. Learners must not be given writing frames, prepared formats, templates or any other forms of scaffolding.

Assessor guidance

Your role as the assessor	As the assessor of this internal assessment, it is your role to: • ensure correct processes to maintain security and authenticity are followed for the duration of the assessment • make and record assessment decisions using the mark bands • provide feedback to learners about their achievement. When acting in dual roles as both teacher and assessor, you should help learners to understand your responsibilities in each capacity so they are aware of the differences during learning and assessment.
Your assessment decision	You must assess learners' evidence for this Pearson-set Assignment using the marking grids for the relevant component provided in this document. Marking grids have four mark bands, each containing the descriptors specifying the level of knowledge, understanding and skills that learners are required to demonstrate to be awarded the marks associated with that band. The descriptors for each band are written to reflect the marks at the top of the mark band and the descriptors should be read and applied as a whole. A glossary of terms used in the marking grids is provided in *Appendix 1* of the specification. **Using a 'best fit approach' to marking the assignments** In applying the marking grid, assessors are required to: • first make a holistic judgement on which mark band most closely matches the learner's response for the evidence being assessed. Each mark band contains a number of 'bulleted traits' that in combination provides a descriptor of the expected performance of a learner in relation to the individual task within the assignment. Consideration should also be given to the descriptors in the mark bands above and below to ensure the correct mark band is selected. The learner's response does not have to meet all the characteristics of a mark band's descriptor before being placed in that mark band, as long as it meets more of the characteristics of that mark band than of any other. • after placing the learner's response within a mark band, the assessor should then make a more refined judgement as to whether the learner's response is towards the higher, or the lower end of the mark range for that mark band and allocate a final mark accordingly within the marks available in that mark band.

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	Further guidance on deciding a final mark The award of marks must be directly related to the descriptors in a mark band. Assessors should be prepared to use the full range of marks available. When deciding upon a final mark, assessors should take into account how well the learner's response meets the requirements of the descriptor in that mark band. • If the learner's response meets the requirements of the descriptor fully, assessors should be prepared to award full marks within the mark band. The top mark in the mark band is used for a learner's response that is as good as can realistically be expected in that mark band. • If the learner's response only barely meets the requirements of the descriptor (but is better than the previous descriptor), assessors should consider awarding marks at the bottom of the mark band. The bottom mark in the mark band is used for a learner's response that is the weakest that can be expected in that mark band. • The middle marks of the mark band are for a learner's response that is a reasonable match to the descriptor. This might represent a balance between some characteristics of the descriptor that are fully met and others that are only barely met. • Where there is no evidence worthy of credit, no marks (0 marks) must be awarded.

Marking grid – Component 3

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 1: Design brief (synoptic) **Learning outcome A: Understand the needs of a client and the constraints on design when designing a low-rise building**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** applied knowledge and understanding of how the client requirements impact on building design. Evidenced through: • a **simple** account which interprets the client's profile in the building design • a **simple** account which interprets the client's needs in the building design • a **simple** account which interprets the client's lifestyle requirements in the building design.	**Adequate** applied knowledge and understanding of how the client requirements impact on building design. Evidenced through: • a **partially developed** account which interprets the client's profile in the building design • a **partially developed** account which interprets the client's needs in the building design • a **partially developed** account which interprets the client's lifestyle requirements in the building design.	**Good** applied knowledge and understanding of how the client requirements impact on building design. Evidenced through: • a **mostly developed** account which interprets the client's profile in the building design • a **mostly developed** account which interprets the client's needs in the building design • a **mostly developed** account which interprets the client's lifestyle requirements in the building design.	**Comprehensive** applied knowledge and understanding of how the client requirements impact on building design. Evidenced through: • a **fully developed** account which interprets the client's profile in the building design • a **fully developed** account which interprets the client's needs in the building design • a **fully developed** account which interprets the client's lifestyle requirements in the building design.

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Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 1: Design brief (synoptic) **Learning outcome A: Understand the needs of a client and the constraints on design when designing a low-rise building**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** applied knowledge and understanding of the external design constraints, relative to the location and scenario. Evidenced through: • a **simple** analysis of **few** of the relevant street scene constraints for the local area and considerations for style and aesthetics • a **simple** analysis of the access issues and services available for the plot of land in the scenario.	**Adequate** applied knowledge and understanding of the external design constraints, relative to the location and scenario. Evidenced through: • a **partially developed** analysis of **some** of the relevant street scene constraints for the local area and considerations for style and aesthetics • a **partially developed** analysis of the access issues and services available for the plot of land in the scenario.	**Good** applied knowledge and understanding of the external design constraints, relative to the location and scenario. Evidenced through: • a **mostly developed** analysis of **most** of the relevant street scene constraints for the local area and considerations for style and aesthetics • a **mostly developed** analysis of the access issues and services available for the plot of land in the scenario.	**Comprehensive** applied knowledge and understanding of the external design constraints, relative to the location and scenario. Evidenced through: • a **fully developed** analysis of **all** of the relevant street scene constraints for the local area and considerations for style and aesthetics • a **fully developed** analysis of the access issues and services available for the plot of land in the scenario.

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 1: Design brief (synoptic) **Learning outcome A: Understand the needs of a client and the constraints on design when designing a low-rise building**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** applied knowledge and understanding of budget and costing to meet the client's requirements. Evidenced through: • a **simple** analysis of the client's budget to determine the size of building and level of specification that can be designed • a **simple** rationale which contains **few** of relevant specification points to meet the needs of the client within the constraints of the scenario.	**Adequate** applied knowledge and understanding of budget and costing to meet the client's requirements. Evidenced through: • a **partially developed** analysis of the client's budget to determine the size of building and level of specification that can be designed • a **partially developed** rationale which contains **some** of relevant specification points to meet the needs of the client within the constraints of the scenario.	**Good** applied knowledge and understanding of budget and costing to meet the client's requirements. Evidenced through: • a **mostly developed** analysis of the client's budget to determine the size of building and level of specification that can be designed • a **mostly developed** rationale which contains **most** of relevant specification points to meet the needs of the client within the constraints of the scenario.	**Comprehensive** applied knowledge and understanding of budget and costing to meet the client's requirements. Evidenced through: • a **fully developed** analysis of the client's budget to determine the size of building and level of specification that can be designed • a **fully developed** rationale which contains **all** of relevant specification points to meet the needs of the client within the constraints of the scenario.

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Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 2: Concept sketches (synoptic) **Learning outcome B: Be able to graphically communicate the design of a low-rise building**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** demonstration of design skills. Evidenced through: • concept sketches that address **few** of the requirements of the client • concept sketches that **occasionally** mitigate external constraints through appropriate building size, building position and orientation, and its features • concept sketches that **occasionally** address the approach to harmonising with local architectural style.	**Adequate** demonstration of design skills. Evidenced through: • concept sketches that address **some** of the requirements of the client • concept sketches that **partially** mitigate external constraints through appropriate building size, building position and orientation, and its features • concept sketches that **partially** address the approach to harmonising with local architectural style.	**Good** demonstration of design skills. Evidenced through: • concept sketches that address **most** of the requirements of the client • concept sketches that **mostly** mitigate external constraints through appropriate building size, building position and orientation, and its features • concept sketches that **mostly** address the approach to harmonising with local architectural style.	**Comprehensive** demonstration of design skills. Evidenced through: • concept sketches that address **all** of the requirements of the client • concept sketches that **fully** mitigate external constraints through appropriate building size, building position and orientation, and its features • concept sketches that **fully** address the approach to harmonising with local architectural style.

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 2: Concept sketches (synoptic) **Learning outcome B: Be able to graphically communicate the design of a low-rise building**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** demonstration of communication in the concept sketches. Evidenced through: • **little** clarity in graphical techniques with **low** level of accuracy • **limited** level of control and **little** appropriate use of varying line thickness • **little** clarity in the annotation of the detail and key features of the design.	**Adequate** demonstration of communication in the concept sketches. Evidenced through: • **some** clarity in graphical techniques with **some** level of accuracy • **adequate** level of control and **some** appropriate use of varying line thickness • **some** clarity in the annotation of the detail and key features of the design.	**Good** demonstration of communication in the concept sketches. Evidenced through: • **mostly** clear graphical techniques with **good** level of accuracy • **good** level of control and **mostly** appropriate use of varying line thickness • **mostly** clear annotation of the detail and key features of the design.	**Comprehensive** demonstration of communication in the concept sketches. Evidenced through: • **complete** clarity in graphical techniques with **high** level of accuracy • **high** level of control with **deliberate** and **fully** appropriate use of varying line thickness • **complete** clarity in the annotation of the detail and key features of the design.

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Appendix 1: Client meeting notes

Client's profile:

- client and partner have just retired from teaching
- currently living in a three-bedroom semi-detached house on a local estate with a floor area of 120m^2 valued at £285,000
- has purchased a corner plot of land in a village location
- environmentally conscious and want to incorporate sustainable energy supplies.

Client's needs – requires:

- a three-bedroom detached bungalow
- a space to entertain guests
- a double bedroom for visitors
- new home to make best use of the open views provided by the location.

Client's lifestyle:

- the client's partner will continue to teach private music lessons from their new home
- the client requires 30m^2 of space for practical hobbies accessed from the outside of the building
- desires high-quality products.

Budget:

- has a budget of £450,000.

Appendix 2: External design constraints

Site/location details:

- relatively level site 35m wide by 75m long
- greenfield site
- gas, electricity and water are available within 3m of the site boundary
- the development falls within the local development plan
- the site is exposed to high winds and backs onto a farmer's field
- a small stream runs along the back of the site on the boundary to the farmer's field
- the local council is aiming for the village to be energy efficient and carbon neutral by 2030.

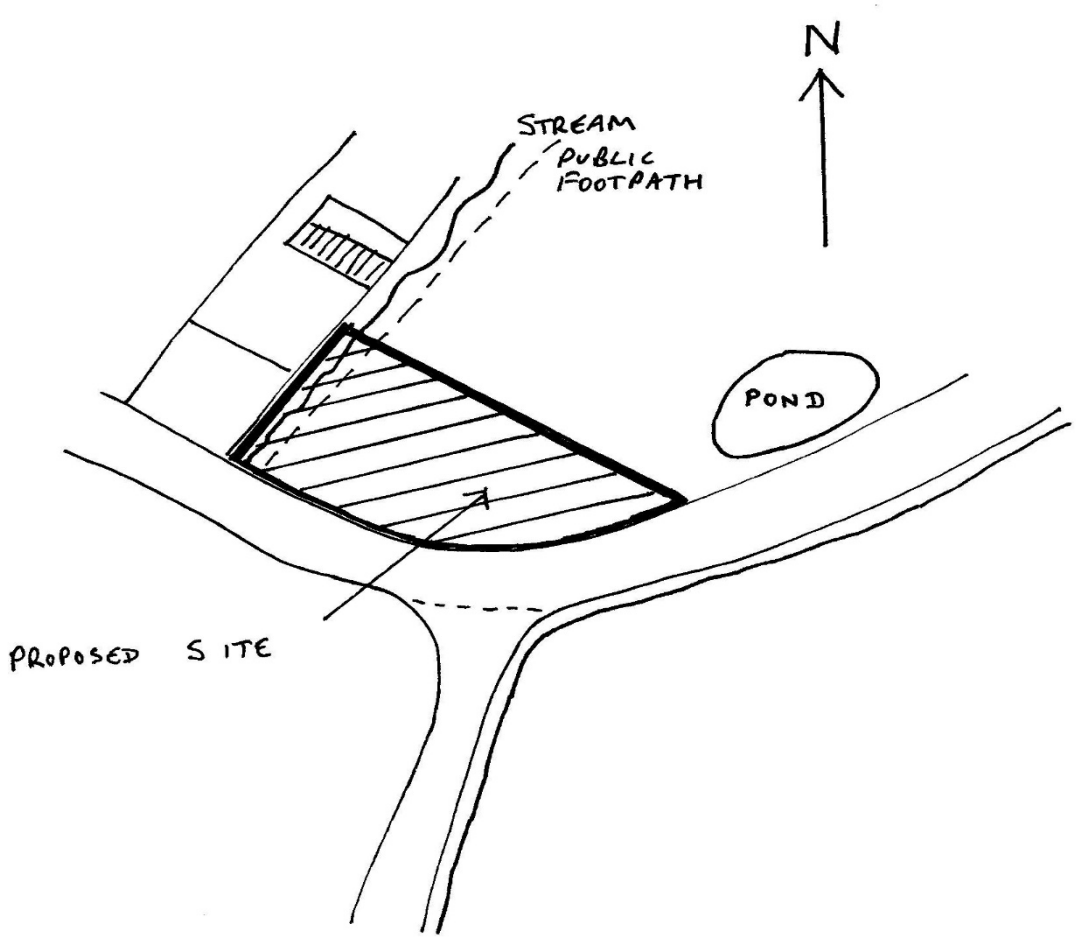

Figure 1: Site location

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Figure 2: General view across the site

Figure 3: View towards the site (site is on the left)

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Figure 4: View from junction (opposite the site)

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